Intellectual Property Administration
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PATENT APPLICATION

ATTORNEY DOCKET NO. 10007856 -1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s):	Kurt E. Spears	**Confirmation No.:**	2193
Application No.:	09/772714	**Examiner:**	Gibbs, Heather D
Filing Date:	Jan 30, 2001	**Group Art Unit:**	2622
Title:	Optical Image Scanner With Illumination Compensation During Lamp Warmup (as Amended)		

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on 03/25/2005.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) $500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

( ) (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

( )	one month	$120.00
( )	two months	$450.00
( )	three months	$1020.00
( )	four months	$1590.00

( ) The extension fee has already been filled in this application.

(X) (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of $500.00. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

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Number of pages:

Typed Name: Donna M Kraft

Signature: Donna M Kraft

Respectfully submitted,

Kurt E. Spears

By A. W. Winfield

Augustus W Winfield

Attorney/Agent for Applicant(s)
Reg. No. 34,046

Date: March 25, 2005

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Date: March 25, 2005

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PATENT APPLICATION

ATTORNEY DOCKET NO. 10007856-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Kurt E. Spears

Serial No.: 09/772,714 Examiner: Gibbs, Heather D.

Filing Date: 01/30/2001 Group Art Unit: 2622

Title: OPTICAL IMAGE SCANNER WITH COLOR AND INTENSITY COMPENSATION DURING LAMP WARMUP

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P.O. Box 1450
Alexandria VA 22313-1450

BRIEF ON APPEAL

INTRODUCTION

Pursuant to the provisions of 37 CFR Part 41, Subpart B, applicants hereby appeal to the Board of Patent Appeals and Interferences (the "Board") from the examiner's final rejection dated 12/02/2004. A notice of appeal was timely filed concurrently with this brief on appeal on 03/25/2005, in accordance with 37 CFR § 41.31(a)(1).

REAL PARTY IN INTEREST

The entire interest in the present application has been assigned to Hewlett-Packard Development Company, L.P., as recorded at reel 014061, frame 0492.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

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STATUS OF CLAIMS

Claims 16-21 are pending in the application.

Claims 16, 17, and 20 have been finally rejected.

Claims 18 and 19 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 21 is allowed.

Claims 16, 17, and 20 are on appeal.

STATUS OF AMENDMENTS

There are no after-final amendments.

SUMMARY OF CLAIMED SUBJECT MATTER

This invention relates generally to image scanners, and more specifically to compensation for changes in intensity and color during warm up of a lamp used for image scanning. A scanner has a calibration strip (figures 1, 2, 6, and 7, 116; figure 6, 600; figure 7, 702), preferably substantially the full width of the scanline (figure 2), that is visible to a photosensor array continuously during a scan (see, for example, page 6, line 7, through page 7, line 17). As a result, scanning can start as soon as the lamp provides sufficient light for scanning, without waiting for the lamp to stabilize. It is not necessary to keep the lamp on, or to keep the lamp warm. In addition, the system provides better scanning accuracy, by providing better compensation during a scan. Preferably, the separate array of photosensors used for monitoring illumination also monitors the color of the illumination along the calibration strip (figure 4, 412; page 8, lines 5-12; page 15, lines 2-12).

Claim 16 specifies initiating image scanning, as soon as sufficient illumination is available, without waiting for illumination to stabilize (page 6, lines 22-24); monitoring the intensity of the illumination, along substantially the entire length of a scanline, during

scanning (figure 2; page 7, lines 9-11); and modifying an output of an imaging array, during scanning, in response to the intensity being monitored (figures 3, 4 and 5; for example, page 9, lines 9-22).

Claim 17, dependent on claim 16, further specifies monitoring the color of the illumination, along substantially the entire length of the scanline, during scanning (figure 4, 412; page 8, lines 5-12; page 15, lines 2-12).

Claim 20, dependent on claim 16, further specifies that each time the step of monitoring the intensity of illumination is performed, the step of measuring intensity values along a scanline is performed more than one time (page 12, line 24, through page 13, line 5)..

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 16 and 20 are unpatentable under 35 U.S.C. § 102(b) as anticipated by U.S. Patent Number 5,153,745 (Brandkamp *et al.*).

2. Whether claim 17 is unpatentable under 35 U.S.C. § 103(a) over Brandkamp *et al.* in view of U.S. Patent Number 6,054,707 (Hou).

ARGUMENT

CLAIMS 16 AND 20

Claim 16 specifies monitoring the intensity of the illumination, along substantially the entire length of a scanline, during scanning. Brandkamp *et al.* do not teach or suggest monitoring the intensity of the illumination, along substantially the length of the scanline, during scanning.

In Brandkamp *et al.*, there is a full-length calibration strip (figure 3, 84) which is used before scanning (see column 5, lines 15-24). During scanning, lamp output is detected by a patch (not illustrated) on the moving assembly 23, outside of the active imaging scan area. Column 4, lines 7-13 are as follows (emphasis added):

> A gain adjustment is applied to the overall output analog signal level from array 24 and AGC circuit 32 and sent to processor 34. This gain is updated on a scan line by scan line basis based on sensed changes in the overall lamp output as detected on an AGC patch which is mounted on assembly 23 outside of the active imaging scan area.

Brandkamp *et al.* do not teach or suggest that the patch is substantially the length of the scanline. The examiner cites column 4, lines 7-13, stating that "the processor 34 sensed by changes in the lamp performs monitoring of the intensity." This does not describe all the limitations of claim 16. Applicant agrees that in figure 2, signals from CCD array 24 go through AGC 32 before being received by processor 34. However, claim 16 specifies that lamp intensity (not image data), is monitored during scanning, along substantially the entire length of the scanline. A patch outside the active imaging scan area does not anticipate monitoring lamp intensity along substantially the entire length of the scanline. In addition, if illumination is monitored using a patch outside of the active imaging area, sensors, other than the sensor array used for the active imaging scan area, are needed to monitor the illumination. Brandkamp *et al.* do not teach or suggest a sensor array for monitoring the illumination along substantially the length of the scanline during scanning.

CLAIM 17

Claim 17 is as follows:

The method of claim 16, further comprising:

> monitoring the color of the illumination, along substantially the entire length of the scanline, during scanning.

The examiner stipulates that Brandkamp *et al.* does not disclose monitoring the color of illumination, along substantially the entire length of the scanline, during scanning. The examiner cites Hou, column 6, lines 48-67 and figure 5B as disclosing "color illumination steps performed along the scanline while scanning." The cited text describes an illumination source, providing colored light, as a back illumination for scanning transparent documents. See also, figure 3, in which light source 306 illuminates document

316 from the back, and figure 4B, in which light source 404 illuminates document 316 from the back. Claim 17 specifies monitoring the color of the illumination during scanning. In Hou, the intensity and color of the illumination is modified by the transparent document being scanned before the light is received by the photosensors. Accordingly, Hou does not teach or suggest monitoring the color of the illumination.

CONCLUSION

In view of the above, applicant respectfully requests that the examiner's rejection of claims 16, 17, and 20 be reversed.

Respectfully submitted,

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March 25, 2005
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APPENDIX

PENDING CLAIMS

16. A method of compensation for illumination variation in an image scanner, comprising:
initiating image scanning, as soon as sufficient illumination is available, without waiting for illumination to stabilize;
monitoring the intensity of the illumination, along substantially the entire length of a scanline, during scanning; and
modifying an output of an imaging array, during scanning, in response to the intensity being monitored.

17. The method of claim 16, further comprising:
monitoring the color of the illumination, along substantially the entire length of the scanline, during scanning.

18. The method of claim 16, further comprising:
measuring, an initial intensity of the lamp, at a position corresponding to a particular pixel on a scanline;
measuring, at time T, an intensity of the lamp, at the position corresponding to the particular pixel on the scanline, during scanning;
measuring, at time T, the intensity at the particular pixel on the scanline;
correcting the intensity of the particular pixel for thermal noise; and
multiplying the corrected intensity of the particular pixel times the initial intensity of the lamp divided by the intensity of the lamp at time T.

19. The method of claim 18, further comprising:
correcting the measurement of the initial intensity of the lamp for thermal noise; and
correcting the measurement of the intensity of the lamp at time T for thermal noise.

20. The method of claim 16, wherein each time the step of monitoring the intensity of illumination is performed, the following step is performed more than one time:

measuring intensity values along a scanline.

21. A method of compensation for illumination variation in an image scanner, comprising:

initiating image scanning, as soon as sufficient illumination is available, without waiting for illumination to stabilize;

measuring the intensity of the illumination, a first time, along substantially the entire length of a scanline, during scanning;

storing outputs of an imaging array for multiple scanlines;

measuring the intensity of illumination, a second time, along substantially the entire length of a scanline, during scanning;

computing interpolated intensity values between the first and second measurements of the intensity of illumination; and

using the interpolated intensity values to modify the stored outputs of the imaging array.